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January 1939

Test 325: Cletrac Model BD

Tractor Museum

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3 pages - page 1

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 325

Dates of test: August 10 to 30, 1939.

Name and model of tractor: CLETRAC BD

Manufacturer: Cleveland Tractor Company, Cleveland, Ohio

Manufacturer's rating: NOT RATED.

B E L T H O R S E P O W E R T E S T S

H. P.	Crank shaft speed R.P.M.	Fuel Consumption			Water used gal. per hr.	Temp. Deg. F.		Barometer Inches of Mercury
		Gal. per hr.	H. P. hr. per gal.	Lb. per H.P. hr.		Cool- ing med.	Air	
TESTS B AND C - 100% MAXIMUM LOAD - TWO HOURS								
45.37	1400	3.459	13.12	0.533	0.000	195	88	28.965
*TEST D - ONE HOUR								
40.67	1399	2.963	13.73	0.509	0.000	186	86	28.920
TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)								
40.30	1392	2.906	13.87	0.504	--	186	87	--
1.90	1507	1.034	1.84	3.805	--	144	87	--
21.47	1476	1.897	11.32	0.618	--	158	87	--
43.44	1374	3.283	13.23	0.528	--	192	87	--
10.50	1479	1.369	7.67	0.911	--	150	85	--
31.17	1441	2.365	13.18	0.530	--	167	87	--
24.80	1445	2.142	11.58	0.604	0.000	166	86	28.925

D R A W B A R H O R S E P O W E R T E S T S

H. P.	Draw bar pull pounds	Speed miles per hr.	Crank shaft speed R.P.M.	Slip on drive wheels %	Fuel Consumption			Water used gal. per hr.	Temp. Deg. F.		Barometer Inches of Mercury
					Gal. per. hr.	H.P. per gal.	Lb. per H.P. hr.		Cool- ing med.	Air	
TESTS F AND G - 100% MAXIMUM LOAD											
31.15	7530	1.55	1406	15.18	-----	Not Recorded	-----	-----	179	84	28.800
36.07	5295	2.55	1402	4.23	-----	Not Recorded	-----	-----	181	80	28.890
35.85	3916	3.43	1401	1.59	-----	Not Recorded	-----	-----	174	77	28.870
*TEST H - TEN HOURS - SECOND GEAR											
28.83	4136	2.61	1399	1.81	2.625	10.98	0.636	0.022	170	82	28.840

*Formerly called RATED LOAD; see REMARKS 4, page 3.

3 pages-page 2

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FUEL, OIL, AND TIME

Fuel Commercial diesel fuel Weight per gallon 6.99 pounds

Oil: S.A.E. No. 30 To motor 3.815 gal. Drained from motor 2.677 gal.

Total time motor was operated 45 hours

BRIEF SPECIFICATIONS

Advertised speeds, miles per hour: First 1.81 Second 2.64

Third 3.46 Reverse 1.38

Belt pulley: Diam. 12" Face 8 1/2" R.P.M. 1050 Belt Speed 3300 f.p.m.

Clutch: Make Long Type Double plate Operated by Foot pedal

Seat Upholstered

Total weight as tested (with operator) 9500 pounds

MOTOR

Make Hercules Serial No. K803736 Type 6 cylinder, vertical,
diesel

Head I Mounting Crankshaft lengthwise Lubrication Pressure

Bore and stroke 3 3/4" x 4 1/2" Rated R.P.M. 1400

Port diameter valves: Inlet 1 5/8" Exhaust 1 1/8"

Fuel Injection System: Bosch Model AFE6A65N400 Serial No. S7935418

Governor: Make Timken Type Variable speed, centrifugal

Air Cleaner: Make Vortox Type Oil-washed, wire filter and A.C. pre-
cleaner

Oil Filter: Make Purolator Type Double unit, metal element

Cooling medium temperature control: None

CHASSIS

Type Tracklayer Serial No. 3D876 Drive Enclosed gear

Tread width: 44" Measured length of track 16.7258'

Cleats: Type Removable rolled steel No. per track 30

Size 2" high x 14" long

3 pages-page 3

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REPAIRS AND ADJUSTMENTS

At the end of the drawbar tests, it was observed that two track pins in the left hand track had worked out approximately one-half inch each.

REMARKS

1. All results shown on page 1 of this report were determined from observed data and without allowances, additions, or deductions. Tests B and F were made with fuel pumps set to develop approximately 48 corrected belt horsepower and data from these tests were used in determining the horsepower to be developed in tests D and H, respectively. Tests C, D, E, G, and H were made with the same setting.
2. Observed maximum horsepower (tests F & B)

<u>DRAWBAR</u>	<u>BELT</u>
36.07	45.37
3. Sea level (calculated) maximum horsepower
(based on 60° F. and 29.92" Hg.)

38.05	48.09
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4. Seventy-five per cent of calculated maximum drawbar horsepower and eighty-five per cent of calculated maximum belt horsepower (formerly A.S.A.E. and S.A.E. ratings)

28.54	40.88
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We, the undersigned, certify that the above is a true and correct report of official tractor test No. 325.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

L. W. Hurlbut

Board of Tractor Test Engineers